VI Risk report

1 Disclosure principles

In its capacity as the parent company in the DZ BANK Group, DZ BANK is publishing this risk report in order to meet the transparency requirements for risks applicable to the DZ BANK Group as specified in **sections 115** and **117** of the **German Securities Trading Act** (WpHG) and German Accounting Standard (GAS) 16. This report also implements the applicable international risk reporting requirements on the basis of International Accounting Standard (IAS) 34, although the legal standards applicable to annual reporting are taken into account.

The risk report also includes information in compliance with those **recommended risk-related disclosures** that have been issued by the Financial Stability Board, the European Banking Authority, and the European Securities and Markets Authority that extend beyond the statutory requirements and that are intended to improve the usefulness of the disclosures in the decision-making process.

The quantitative disclosures in this risk report are based on information that is presented to the Board of Managing Directors and used for internal management purposes (known as the **management approach**). The disclosure of this information, which is important for knowledgeable users, is designed to ensure that external reporting is useful when such users need to make decisions.

DZ BANK Group

2 Summary

2.1 Risk management system

The DZ BANK Group's risk management system was described in detail in the DZ BANK Group and DZ BANK risk report ('2021 risk report') within the 2021 group management report. Those disclosures are also applicable to the first half of this year, unless otherwise indicated in this report.

The information in this section is limited to the core components of the risk management system.

2.1.1 Fundamental features

Risks result from adverse developments affecting financial position or financial performance, and essentially comprise the risk of an unexpected future liquidity shortfall or unexpected future losses. A distinction is made between liquidity and capital. Risks that materialize can affect both of these resources.

The risk management system is based on the risk appetite statement – the fundamental document for determining risk appetite in the DZ BANK Group – and the specific details and additions in **risk strategies**, which are consistent with the business strategies and have been approved by the Board of Managing Directors. The **risk appetite statement** contains risk policy guidelines and risk strategy requirements applicable throughout the group. It also sets out quantitative guidelines reflecting risk appetite.

The methods used to **measure risk** are an integral element of the risk management system and are progressively refined and enhanced. Risk model calculations are used to manage the DZ BANK Group.

The DZ BANK Group has a **risk management system** that is updated on an ongoing basis in line with changes to the business and regulatory environment. The risk management system is designed to enable them to identify material risks – particularly risks to their survival as a going concern – at an early stage and to initiate the necessary control measures. The system therefore incorporates various elements, including organizational arrangements, methods, IT systems, the limit system based on economic risk-bearing capacity, stress testing of all material risk types, and internal reporting.

The tools used for the purposes of risk management are also designed to enable the DZ BANK Group to respond appropriately to **significant market movements**. Possible changes in risk factors are reflected in adjusted risk parameters in the mark-to-model measurement of credit risk and market risk. Conservative crisis scenarios for short-term and medium-term liquidity are intended to ensure that liquidity risk management also takes adequate account of market crises.

2.1.2 KPIs

Risks affecting liquidity and capital resources are managed on the basis of groupwide liquidity risk management and groupwide risk capital management. The purpose of **liquidity risk management** is to ensure adequate levels of liquidity reserves are in place in respect of risks arising from future payment obligations (liquidity adequacy). The aim of **risk capital management** is to ensure the availability of capital resources that are commensurate with the risks assumed (capital adequacy).

The key risk management figures used in respect of **liquidity** are the minimum liquidity surplus, the liquidity coverage ratio (LCR), and the net stable funding ratio (NSFR). The key risk management figures used in respect of **capital** are economic capital adequacy, the coverage ratio for the financial conglomerate, and the regulatory capital ratios, plus the leverage ratio and the minimum requirement for own funds and eligible liabilities (MREL).

2.1.3 Management units

Based on the requirements set out in GAS 20.A1.3, this risk report is structured according to **risk type**. The DZ BANK Group is managed using the main types of risk, taking into account particular features relating to DZ BANK and its material subsidiaries (referred to below as **management units**).

All entities in the DZ BANK Group are integrated into the groupwide risk management system. The DZ BANK Group largely comprises the DZ BANK banking group and R+V. The management units form the core of the financial services group.

The insurance business operated at R+V differs in material respects from the other businesses of the DZ BANK Group. For example, actuarial risk is subject to factors that are different from those affecting the risks typically assumed in banking business. Furthermore, policyholders have a share in any gains or losses from investments in connection with life insurance, as specified in statutory requirements, and this must be appropriately taken into account in the measurement of risk. Not least, the supervisory authorities also treat banking business and insurance business differently and this is reflected in differing regulatory regimes for banks and insurance companies.

Because of these circumstances, two sectors have been created within the DZ BANK Group for the purposes of economic risk management. The management units are assigned to the Bank sector and Insurance sector as follows:

Bank sector:
- DZ BANK
- BSH
- DZ HYP
- DVB
- DZ PRIVATBANK
- TeamBank
- UMH
- VR Smart Finanz

Insurance sector:
– R+V.

The management units represent the operating segments of the DZ BANK Group. From a risk perspective, the 'DZ BANK' management unit equates to the central institution and corporate bank operating segment and the holding function.

DZ HYP has applied the **capital waiver** pursuant to section 2a (1), (2), and (5) of the German Banking Act (KWG) in conjunction with article 7 (1) of the Capital Requirements Regulation (CRR), under which – provided certain conditions are met – regulatory supervision at individual bank level may be replaced by supervision of the entire banking group.

Furthermore, **DZ BANK** and **DZ HYP** have elected to apply the **liquidity waiver** pursuant to article 8 CRR. The waiver enables the LCR and NSFR to be applied at the level of a single liquidity subgroup consisting of DZ BANK and DZ HYP. This means that it is no longer necessary to comply with the regulatory liquidity requirements at the level of the two individual institutions.

The management units are deemed to be material in terms of their contribution to the DZ BANK Group's aggregate risk and are directly incorporated into the group's risk management system. The other subsidiaries and investee entities of DZ BANK are integrated into the risk management system either indirectly as part of equity investment risk or directly as part of other types of risk. This is decided for each of them annually.

The management units' subsidiaries and investees are also included in the DZ BANK Group's risk management system – indirectly via the majority-owned entities – with due regard to the minimum standards applicable throughout the group.

Risk is managed groupwide on a consolidated basis.

2.2 Risk factors and risks

The entities in the DZ BANK Group are exposed to a number of risk factors. These include adverse factors concerning the entity's environment that either affect multiple types of risk (general risk factors) or are typical of specific types of risk (specific risk factors). Disclosures on **general risk factors** can be found in section 3 of this risk report. The **specific risk factors** are shown in the risk-type-specific sections of the 2021 risk report. The disclosures there continue to apply unchanged to the current year.

The main features of the directly managed **risks** and their significance for the operating segments in the Bank and Insurance sectors were shown in Fig. 3 and Fig. 4 respectively of the 2021 risk report. The risks shown there correspond to the outcome of the risk inventory check and reflect the risks that are material to the DZ BANK Group. This presentation also applies to the first six months of the current year.

2.3 Risk profile and risk appetite

The DZ BANK Group's **business model** and the associated business models used by the management units determine the risk profile.

The values for the measurement of **liquidity and capital adequacy** presented in Fig. 2 reflect the liquidity risks and the risks backed by capital assumed by the DZ BANK Group. They illustrate the **risk profile** of the DZ BANK Group. The values for these KPIs are compared against the (internal) threshold values specified by the Board of Managing Directors of DZ BANK – also referred to below as **risk appetite** – and against the (external) minimum targets laid down by the supervisory authorities. The KPIs are explained in more detail later in this risk report.

FIG. 2 – LIQUIDITY AND CAPITAL ADEQUACY KPIS

	Measured figure		Internal minimum threshold value		External minimum target	
	Jun. 30, 2022	Dec. 31, 2021	2022	2021	2022	2021
LIQUIDITY ADEQUACY						
DZ BANK Group (economic perspective)						
Economic liquidity adequacy (€ billion)[1]	13.2	19.4	4.0	4.0	0.0	0.0
DZ BANK banking group (normative internal perspective)						
Liquidity coverage ratio – LCR (%)	141.2	147.7	110.0	110.0	100.0	100.0
Net stable funding ratio – NSFR (%)	121.3	127.1	105.0	105.0	100.0	100.0
CAPITAL ADEQUACY						
DZ BANK Group (economic perspective)						
Economic capital adequacy (%)	203.2	210.7	120.0	120.0	100.0	100.0
DZ BANK financial conglomerate (normative internal perspective)						
Coverage ratio (%)	135.5	150.8	110.0	110.0	100.0	100.0
DZ BANK banking group (normative internal perspective)						
Common equity Tier 1 capital ratio (%)[2]	13.3	15.3	10.0	10.0	9.0	9.0
Tier 1 capital ratio (%)[2]	14.8	16.8	11.9	11.9	10.8	10.8
Total capital ratio (%)[2]	16.4	18.5	14.3	14.3	13.2	13.3
Leverage ratio (%)[2]	4.5	7.3	4.0	3.5	3.0	3.3
MREL ratio (%)[3, 4]	35.4	37.3	26.8		25.1	
Subordinated MREL ratio (%)[3]	25.0	26.5	24.8		23.8	

Not available

1 The measured value relates to the stress scenario with the lowest minimum liquidity surplus. The internal threshold value relates to the observation threshold.
2 The external minimum targets are the binding regulatory minimum capital requirements. Further details can be found in section 6.2.2.
3 Calculated as the ratio of the total of regulatory own funds and eligible bail-in-able liabilities to the total risk exposure amount (TREA).
4 The calculation of the MREL ratio was changed with effect from January 1, 2022. This means that the figure as at December 31, 2021 differs from the corresponding disclosures in the 2021 risk report. Details on the change of method can be found in section 6.2.2.

The **solvency** of DZ BANK and its subsidiaries was never in jeopardy at any point during the reporting period. They also complied with regulatory requirements for liquidity adequacy. By holding ample liquidity reserves, the group aims to be able to protect its liquidity against any potential crisis-related threats.

In addition, the DZ BANK Group remained within its economic **risk-bearing capacity** in the first half of 2022 and also complied with regulatory requirements for capital adequacy on every reporting date.

3 General risk factors

3.1 General risk factors that have not changed materially

The general risk factors that were material to the DZ BANK Group and remained unchanged compared with 2021 are set out below. Details of these risk factors can be found in the 2021 risk report.

Regulatory risk factors:
- Regulatory capital buffers
- Switch in interest-rate benchmarks

Macroeconomic risk factors:
- Risks to the global economy as a result of the COVID-19 pandemic
- Economic divergence in the eurozone

Risk factors affecting environmental, social, or corporate governance matters (ESG risk factors):
- Climate-related and environmental risks
- Social risks and corporate governance risks

Rating downgrades for DZ BANK

3.2 General risk factors that have changed materially

Disclosures on the macroeconomic risk factors listed below were published in the 2021 risk report. Due to material changes in the first six months of the year, these disclosures have been updated below.

3.2.1 The war in Ukraine and the Russian gas embargo

At present, the war in Ukraine is casting a shadow over the outlook for the global economy. Western countries imposed sanctions on Russia at an early stage and have gradually tightened them. The effects are being felt not only by Russia. The entire global economy is suffering from steep increases in the cost of commodities and high energy prices. Germany and other European Union (EU) countries are particularly badly affected because of their dependence on Russian energy supplies.

Repeated interruptions to, or reductions in, the supply of gas from Russia may be reflected in high energy prices, which will weigh on macroeconomic growth. If the supply of Russian gas to Europe were to be cut off completely, this would presumably have an even greater impact on growth and inflation. A physical lack of gas, particularly in the winter months, would lead to supply restrictions that would primarily affect industry. These difficulties could become more challenging as a result of supply relationships and interdependencies between entities. In this kind of risk scenario, a general economic recession would be very likely.

This would impact on **credit risk** and **operational risk** in the Bank sector and on **market risk** in the Insurance sector.

3.2.2 International trade disputes and supply chain problems

For global trade, there continues to be a risk of a renewed escalation of **trade disputes between the United States, China, and Europe** in addition to the effects of disrupted supply chains described in chapter IV.1 in the outlook. This could have negative consequences for the global economy, and for the export-dependent German economy in particular. The sanctions imposed on Russia by western countries create further potential for tension between the EU and the United States in respect of countries that either fail to implement these sanctions or only partially impose them, for example China.

The war in Ukraine is leading to both bottlenecks and supply problems. One of the areas affected is food. Furthermore, the considerable **vulnerability of international supply chains** to specific critical events has become evident in recent years. Such events include, for example, COVID-19-related stoppages in production and logistics in China, the blocking of the Suez Canal by a ship that became stuck, the war in Ukraine, and the conflict between Taiwan and China.

For companies in Germany, restrictions on global trade may, on the one hand, lead to higher import prices and a shortage of base products, and on the other, cause a decline in exports. A reduction of the global trade volume may have a negative impact on **credit risk** in the Bank sector.

3.2.3 Inflation – stagflation

Chapter IV.1 in the outlook describes the anticipated trend in inflation. Given the risk that prices will continue to rise faster than the currently expected rates of inflation, this issue is also addressed below as a risk factor.

In the first half of 2022, inflation continued to gather pace in the eurozone and in the United States due to a combination of several factors. As well as low prices in the previous year and pent-up demand for consumer products and capital goods as a result of the pandemic, the main reasons were rising energy prices worldwide and problems in global supply chains. The war in Ukraine further accelerated the increase in energy and food prices. Current shortages of some products as a result of the supply bottlenecks may still trigger substantial price increases for manufacturers, which may pass them on to consumers.

This means that there is a risk that the currently elevated level of inflation may not be a temporary phenomenon and some major components could keep the inflation rate above the ECB's inflation target for an extended period. This would be particularly problematic if the higher prices, combined with the reduction in manufacturing output, also made consumers reluctant to spend and wages simultaneously rose as this would result in a wage/price spiral. This could ultimately lead to a period of stagflation, i.e. a combination of elevated inflation, stagnant output and demand, and rising unemployment. Moreover, the ECB's latitude for tackling inflation is probably more limited than in the past, not least because the pandemic has resulted in further increases in government debt in vulnerable eurozone countries.

Stagflation may impact **credit risk** in the Bank sector and **market risk** in the Insurance sector, in particular. As at the reporting date, no stagflation-related increase in the measured risks was evident.

3.3 New general risk factors

The following macroeconomic risk factors emerged in the first half of 2022. They had not yet been relevant during the previous year.

3.3.1 Abrupt change in the interest-rate environment

Market interest rates rose significantly across all maturity periods in the first half of the year as a result of the change in direction of monetary policy introduced in the United States by the Federal Reserve Board in mid-March and the tightening that was announced by the ECB in June and implemented in July. After the low-interest-rate environment of previous years, this abrupt change, with its potentially ongoing interest-rate rises, poses a challenge to the Bank sector and the Insurance sector.

In the **Bank sector**, any further rapid rise in interest rates could trigger market risk as regards liquidity and capital and this would particularly affect BSH because of its building society operations and its own-account investing activities. In the **Insurance sector**, a rise in interest rates would result in fair value losses on investments. There is also a risk that policyholders could increasingly allow existing life insurance policies to lapse.

3.3.2 Correction in real estate markets

Despite warnings about over-inflated valuations, real estate prices in Germany rose further even after the outbreak of the COVID-19 pandemic. In the face of already high price levels, the rises observed during the first six months of 2022 in home-finance interest rates and inflation increased the risk of a correction in real estate markets. Rising interest rates increase the financial burden for real estate buyers, whereas inflation simultaneously reduces the income that households have available for repayments. In the commercial real estate market, project developers and property developers are affected by the increasing costs of materials and energy costs as well as by disrupted supply chains. For hotel real estate, in particular, uncertainty continues to exist about how the COVID-19 pandemic will unfold going forward. These developments will mainly affect the Bank sector's **credit risk**. No material impact on the credit risk key figures was evident as at the reporting date.

4 Dealing with the impact of acute global crises

4.1 Relaxation of supervisory requirements

The lowering of the **external minimum targets** for regulatory key figures that had been carried out by the supervisory authorities in 2020 in response to the **COVID-19 pandemic** continued to apply unchanged in the first half of 2022. The same was true for the lower **internal thresholds** for selected regulatory capital adequacy metrics that had been adopted by the Board of Managing Directors of DZ BANK in the previous year. The banking supervisor's pandemic-related relaxing of requirements relating to the preparation of a group recovery plan in previous years ceased to apply. In particular, the number of stress scenarios to be prepared has been increased back to four, compared with only two in the previous year.

4.2 Risk management measures

As a result of the normalization of the risks arising from the COVID-19 pandemic, the **special reporting measures relating to the pandemic** implemented in 2020 were integrated into the standard risk reporting system in the first half of 2022. The financial and risk radar and the CET1 radar were no longer used.

A new instrument for reporting to the Board of Managing Directors of DZ BANK was established in February of this year, the **Russia/Ukraine radar**, which is used to closely manage and monitor risks arising from the war in Ukraine.

In response to the war in Ukraine, a one-year ad hoc scenario was added to the groupwide **stress test report** in March 2022. Among other things, this scenario assumes a complete halt in gas supplies from Russia and incorporates rising inflation and interest rates. A two-year scenario was developed in the second quarter based on the threats and risks that continue to be relevant (inflation, interest-rate increases, war in Europe) and contains the medium-term outlook of a halt in gas supplies from Russia. This two-year scenario was reported for the first time as at June 30, 2022.

Disclosures on the **risks** resulting from the COVID-19 pandemic and the war in Ukraine can be found in the relevant risk-type-specific sections of this report. This concerns credit risk (section 7.3) in the Bank sector and actuarial risk (section 13.1) and market risk (section 14.2) in the Insurance sector.

5 Liquidity adequacy

5.1 Economic perspective

5.1.1 Quantitative variables

Liquid securities

The available liquid securities have a significant influence on the level of the minimum liquidity surplus. Liquid securities are a component of the **counterbalancing capacity** and are largely held in the portfolios managed by DZ BANK's Group Treasury and Capital Markets Trading divisions or in the portfolios of the treasury units at the subsidiaries of DZ BANK. Only bearer bonds are counted as liquid securities.

Liquid securities comprise highly liquid securities that are suitable for collateralizing funding in private markets, securities eligible as collateral for central bank loans, and other securities that can be liquidated in the one-year forecast period that is relevant for liquidity risk.

Securities are only eligible as liquid securities if they are not pledged as collateral, e.g. for secured funding. Securities that have been borrowed or taken as collateral for derivatives business or in connection with secured funding only become eligible when they are freely transferable. Eligibility is recognized on a daily basis and also takes into account factors such as restrictions on the period in which the securities are freely available.

Liquid securities represent the largest proportion of the counterbalancing capacity and make a major contribution to maintaining solvency in the stress scenarios with defined limits at all times during the relevant forecast period. In the first month, which is a particularly critical period in a crisis, liquid securities are almost exclusively responsible for maintaining solvency in the stress scenarios with defined limits.

Fig. 3 shows the liquidity value of the liquid securities that would result from secured funding or if the securities were sold. The total liquidity value as at June 30, 2022 amounted to €29.8 billion (December 31, 2021: €30.3 billion). The decline in liquid securities eligible for GC Pooling resulted from a reduction in the securities in the DZ BANK Group's own portfolio and was not entirely offset by an increase in the net position of collateral received and pledged. Conversely, the liquidity value increased due to a reduction in the pledged volume of liquid securities eligible as collateral for central bank loans.

Unsecured short- and medium-term funding
Other than liquid securities, the main factors determining the minimum liquidity surplus are the availability and composition of the sources of funding.

The range of funding sources in the unsecured money markets is shown in Fig. 4. The changes in the composition of the sources of funding compared with the end of 2021 were attributable to the diversification of customer and investor behavior resulting from changes in interest rates triggered by the money market policy implemented by the ECB.

Further information on liquidity management and funding can be found in chapter II.5 in the business report.

FIG. 3 – LIQUID SECURITIES

€ billion	Jun. 30, 2022	Dec. 31, 2021
Liquid securities eligible for GC Pooling (ECB Basket)[1]	**14.9**	**16.4**
Securities in own portfolio	19.3	23.0
Securities received as collateral	25.2	16.9
Securities provided as collateral	-29.6	-23.6
Liquid securities eligible as collateral for central bank loans	**8.9**	**8.0**
Securities in own portfolio	18.6	20.5
Securities received as collateral	6.4	8.2
Securities provided as collateral	-16.1	-20.6
Other liquid securities	**6.1**	**5.9**
Securities in own portfolio	5.9	5.8
Securities received as collateral	0.3	0.1
Securities provided as collateral	-0.2	-
Total	**29.8**	**30.3**
Securities in own portfolio	43.7	49.3
Securities received as collateral	32.0	25.3
Securities provided as collateral	-45.9	-44.2

1 GC = general collateral, ECB Basket = eligible collateral for ECB funding.

FIG. 4 – UNSECURED SHORT-TERM AND MEDIUM-TERM FUNDING

€ billion	Jun. 30, 2022	Dec. 31, 2021
Deposits	**95.1**	**97.5**
Deposits of local cooperative banks	48.7	58.5
Current account deposits of other customers	46.4	39.0
Money market borrowing	**73.2**	**32.2**
Central banks, interbank, and customer banks	17.0	5.5
Corporate customers and institutional customers	33.8	14.1
Certificates of deposit/commercial paper	22.5	12.6

5.1.2 Risk position
Economic liquidity adequacy is assured if none of the four stress scenarios with defined limits exhibit a negative value for the key risk indicator 'minimum liquidity surplus'. Fig. 5 shows the results of measuring liquidity risk. The results are based on a daily calculation and comparison of forward cash exposure and counterbalancing capacity. The values reported are the values that occur on the day on which the liquidity surplus calculated over the forecast period of one year is at its lowest point.

FIG. 5 – LIQUIDITY UP TO 1 YEAR IN THE STRESS SCENARIOS WITH DEFINED LIMITS: MINIMUM LIQUIDITY SURPLUSES

	Forward cash exposure		Counterbalancing capacity		Minimum liquidity surplus	
€ billion	Jun. 30, 2022	Dec. 31, 2021	Jun. 30, 2022	Dec. 31, 2021	Jun. 30, 2022	Dec. 31, 2021
Downgrading	-48.9	-22.5	81.4	51.7	32.6	29.2
Corporate crisis	-40.5	-11.0	53.6	32.9	13.2	21.9
Market crisis	-43.8	-13.2	66.5	42.2	22.8	29.0
Combination crisis	-44.3	0.5	60.3	18.9	16.0	19.4

The reduction in the forward cash exposure and the increase in the counterbalancing capacity mainly resulted from a TLTRO tranche that is due to mature on June 28, 2023. The slightly larger increase in the forward cash exposure and counterbalancing capacity in the combination crisis stress scenario compared with the other stress scenarios was caused by a change in the date on which the liquidity surplus was at a minimum. Although this date was in the first month of the one-year forecast period as at the end of 2021, it was at the end of the forecast period as at the reporting date.

The liquidity risk value measured as at June 30, 2022 for the stress scenario with defined limits with the lowest minimum liquidity surplus (squeeze scenario) was €13.2 billion (December 31, 2021: €19.4 billion). The decrease in the minimum liquidity surplus was largely due to a reduction in the local cooperative banks' current account deposits at DZ BANK.

The risk values as at June 30, 2022 were above the internal threshold value (€4.0 billion) and above the **limit** (€1.0 billion). They were also above the external minimum target (€0 billion). The observation threshold, limit, and external minimum target remained unchanged compared with 2021.

The minimum liquidity surplus as at June 30, 2022 was positive in the stress scenarios with defined limits that were determined on the basis of risk appetite. This is due to the fact that the counterbalancing capacity was above the cumulative cash outflows on each day of the defined forecast period in every scenario, which indicates that the cash outflows assumed to take place in a crisis could be comfortably covered.

The new general risk factor 'abrupt change in the interest-rate environment' (see section 3.3.1) had no significant impact on economic liquidity adequacy.

5.2 Normative internal perspective

5.2.1 Liquidity coverage ratio

The LCR for the DZ BANK banking group calculated in accordance with Commission Delegated Regulation (EU) 2015/61 as at June 30, 2022 is shown in Fig. 6.

FIG. 6 – LIQUIDITY COVERAGE RATIO AND ITS COMPONENTS

	Jun. 30, 2022	Dec. 31, 2021
Total liquidity buffer (€ billion)	129.2	97.3
Total net liquidity outflows (€ billion)	91.5	65.9
LCR (%)	141.2	147.7

The decrease in the LCR from 147.7 percent as at December 31, 2021 to 141.2 percent as at June 30, 2022 resulted from the LCR's greater sensitivity in respect of the increased net liquidity outflows. This negative effect had a larger impact than the countervailing, positive effect of the higher excess cover (calculated by deducting the net liquidity outflows from the liquidity buffer).

The larger liquidity buffer was mainly due to the growth of balances with central banks on the back of a higher volume of long-term own issues and deposits from financial and non-financial customers. While long-term own issues are only included in liquidity outflows in the last 30 days before the maturity date, deposits are added to the outflows with a specific factor based on their maturity period. This caused a smaller increase in net liquidity outflows – mainly due to long-term funding – and led to positive excess cover. As the LCR is more sensitive to changes in liquidity outflows than to changes in the liquidity buffer, the two opposing effects resulted in an overall reduction in the KPI.

The **internal threshold value** that applies to the DZ BANK banking group (110.0 percent) was exceeded as at the reporting date. The regulatory **external minimum target** applicable to the DZ BANK banking group (100.0 percent) was also exceeded as at June 30, 2022.

5.2.2 Net stable funding ratio

The NSFR is intended to limit mismatches between the maturity structures of assets-side and liabilities-side business. The ratio is the amount of available stable funding (equity and liabilities) relative to the amount of required stable funding (assets-side business). The funding sources are weighted according to their degree of stability and assets are weighted according to their degree of liquidity based on factors defined by the supervisory authority. The NSFR, which has a longer-term focus, complements the LCR, which has a short-term focus.

The NSFR for the DZ BANK banking group is shown in Fig. 7.

FIG. 7 – NET STABLE FUNDING RATIO AND ITS COMPONENTS

	Jun. 30, 2022	Dec. 31, 2021
Available stable funding (weighted equity and liabilities; € billion)	281.0	293.7
Required stable funding (weighted assets; € billion)	231.7	231.1
Excess cover/shortfall (€ billion)[1]	49.3	62.6
NSFR (%)	**121.3**	**127.1**

1 Excess cover = positive values, shortfall = negative values.

Excess cover in relation to the NSFR is the difference between the available stable funding and the required stable funding.

The fall in the NSFR from 127.1 percent as at December 31, 2021 to 121.3 percent as at June 30, 2022 was mainly due to a reduction in the excess cover. This was, in turn, due to a fall in the amount of available stable funding – mainly operational deposits of the cooperative financial network – and a simultaneous increase in funding requirements resulting from loans and encumbered reverse repos.

As at the reporting date, both the **internal threshold** for the NSFR of 105.0 percent and the regulatory **external minimum target** of 100.0 percent were exceeded.

6 Capital adequacy

6.1 Economic perspective

The annual recalculation of the overall solvency requirement took place as at December 31, 2021 owing to scheduled changes to the parameters for the risk measurement procedures carried out in the second quarter of 2022 for the Insurance sector on the basis of R+V's 2021 consolidated financial statements and the updating of actuarial assumptions. The recalculation reflects updated measurements of insurance liabilities based on annual actuarial analyses and updates to parameters in the risk capital calculation. Because of the complexity and the amount of time involved, the parameters are not completely updated in the in-year calculation and an appropriate projection is made.

The recalculation led to changes in the available internal capital, key risk indicators, and economic capital adequacy. The figures as at December 31, 2021 given in this risk report have been restated accordingly and are not directly comparable with the figures in the 2021 risk report.
The DZ BANK Group's **available internal capital** as at June 30, 2022 stood at €29,337 million. The comparable figure as at December 31, 2021 was €31,873 million. The year-on-year decline in the available internal capital was largely due to the Insurance sector and was primarily explained by the trend in capital markets.

The **limit** derived from the available internal capital was set at €22,215 million as at June 30, 2022 (December 31, 2021: €23,588 million).

As at June 30, 2022, **aggregate risk** was calculated at €14,435 million. The comparable figure as at December 31, 2021 was €15,131 million. The decrease was primarily driven by lower credit risk and business risk in the Bank sector.

As at June 30, 2022, the **economic capital adequacy ratio** for the DZ BANK Group was calculated at 203.2 percent. The comparable figure as at December 31, 2021 was 210.7 percent. As at the reporting date, the economic capital adequacy ratio was higher than the internal threshold value of 120.0 percent and the external minimum target of 100.0 percent. The internal threshold value and the external minimum target for 2022 are unchanged compared with those for 2021. The decrease in the economic capital adequacy ratio compared with the end of 2021 was due to the smaller amount of available internal capital.

Fig. 8 provides an overview of economic capital adequacy and its components.

FIG. 8 – ECONOMIC CAPITAL ADEQUACY OF THE DZ BANK GROUP

	Jun. 30, 2022	Dec. 31, 2021
Available internal capital (€ million)[1]	29,337	31,873
Limit (€ million)	22,215	23,588
Aggregate risk (€ million)[1]	14,435	15,131
Economic capital adequacy (%)[1]	**203.2**	**210.7**

1 Value as at December 31, 2021 after recalculation of R+V's overall solvency requirement. Different values were stated in the 2021 risk report.

In the case of the risk types in the Bank sector and Insurance sector, the risk capital requirement also contains any decentralized **capital buffer requirement** that has been assigned. To simplify matters, only the terms 'risk capital requirement' and 'overall solvency requirement' will be used in the remainder of this risk report. These include the decentralized capital buffer requirement.

The limits and risk capital requirements for the **Bank sector**, broken down by risk type, are shown in Fig. 9.

FIG. 9 – LIMITS AND RISK CAPITAL REQUIREMENTS IN THE BANK SECTOR

	Limit		Risk capital requirement	
€ million	Jun. 30, 2022	Dec. 31, 2021	Jun. 30, 2022	Dec. 31, 2021
Credit risk	6,437	7,188	4,469	5,037
Equity investment risk	1,230	1,220	969	996
Market risk	6,680	5,725	3,863	3,713
Technical risk of a home savings and loan company[1]	720	706	689	639
Business risk[2]	280	640	89	407
Operational risk	1,112	1,102	930	941
Total (after diversification)	**15,380**	**15,403**	**10,250**	**10,871**

1 Including business risk and reputational risk of BSH.
2 Apart from that of BSH, reputational risk is contained in the risk capital requirement for business risk.

Fig. 10 sets out the limits and overall solvency requirements for the **Insurance sector**, broken down by risk type, and includes policyholder participation. The definition of the limits and determination of overall solvency requirements take into account the ability to offset deferred taxes against losses (which arises where deferred tax liabilities can be eliminated in the loss scenario). Diversification effects between the risk types are also taken into consideration. Owing to these effects of correlation, the overall solvency requirement and limit for each risk type are not cumulative.

FIG. 10 – LIMITS AND OVERALL SOLVENCY REQUIREMENTS IN THE INSURANCE SECTOR

	Limit		Overall solvency requirement	
€ million	Jun. 30, 2022	Dec. 31, 2021	Jun. 30, 2022	Dec. 31, 2021[1]
Life actuarial risk[2]	850	600	655	343
Health actuarial risk	300	350	153	231
Non-life actuarial risk	3,200	4,600	1,775	1,939
Market risk	3,880	4,400	3,073	3,169
Counterparty default risk	350	350	265	235
Operational risk	1,000	1,000	683	718
Risks from entities in other financial sectors	180	180	130	130
Total (after diversification)	**6,155**	**7,460**	**3,703**	**3,685**

1 Values after recalculation of the overall solvency requirement. Different values were stated in the 2021 risk report.
2 Reputational risk is implicitly included in the overall solvency requirement for life actuarial risk (lapse risk).

In addition to the amounts shown in Fig. 9 and Fig. 10, the aggregate risk includes a **centralized capital buffer requirement across all types of risk**, which was calculated at €482 million as at June 30, 2022 (December 31, 2021: €575 million). The corresponding **limit** was €680 million (December 31, 2021: €725 million). This decrease in the centralized capital buffer requirement was predominantly due to the updating of components of credit risk.

6.2 Normative internal perspective

6.2.1 DZ BANK financial conglomerate

The DZ BANK financial conglomerate comprises the DZ BANK banking group and the R+V Versicherung AG insurance group. The changes in the coverage ratio and in the own funds and solvency requirements of the DZ BANK financial conglomerate are shown in Fig. 11.

FIG. 11 – REGULATORY CAPITAL ADEQUACY OF THE DZ BANK FINANCIAL CONGLOMERATE[1]

	Jun. 30, 2022	Dec. 31, 2021[2]
Own funds (€ million)	33,687	36,896
Solvency requirements (€ million)	24,868	24,470
Coverage ratio (%)	**135.5**	**150.8**

1 The values for the DZ BANK banking group included in the calculations were determined in accordance with the CRR transitional guidance.
2 Final figures. Preliminary figures were stated in the 2021 risk report.

The decrease in the coverage ratio calculated for the DZ BANK financial conglomerate from 150.8 percent as at December 31, 2021 to 135.5 percent as at June 30, 2022 was attributable, in particular, to the reduction in own funds. By contrast, the DZ BANK financial conglomerate's solvency requirements increased. The change in the coverage ratio was attributable to effects in the DZ BANK banking group and in the R+V Versicherung AG insurance group (see sections 6.2.2 and 6.2.3 of this risk report).

The final coverage ratio calculated for the financial conglomerate as at June 30, 2022 was higher than both the internal threshold value (110.0 percent) and the external minimum target (100.0 percent). According to current projections, this is also expected to be the case for the rest of 2022.

6.2.2 DZ BANK banking group

Regulatory capital ratios

The regulatory **own funds** of the DZ BANK banking group as at June 30, 2022 determined in accordance with the CRR transitional guidance amounted to a total of €23,821 million (December 31, 2021: €27,729 million). This equated to a decline in own funds of €3,908 million compared with the end of 2021, mainly comprising a decrease in common equity Tier 1 capital of €3,734 million and a fall in Tier 2 capital of €174 million.

The decrease in common equity Tier 1 capital was mostly due to temporary accounting effects at R+V. As a member of the DZ BANK Group, R+V already had to measure its assets at fair value in accordance with IFRS 9. Equity and liabilities, and therefore liabilities to policyholders, will only be treated in the same way after the transition to IFRS 17 next year. This led to a temporary technical interest-rate risk caused by the strong increase in interest rates during the reporting period. The result was a negative contribution to earnings and a significantly lower contribution to common equity Tier 1 capital as at June 30, 2022. A countervailing effect is anticipated in 2023.

Tier 2 capital declined from €2,546 million as at December 31, 2021 to €2,372 million as at June 30, 2022, a decrease of €174 million. This decrease was attributable to a €76 million increase in the deduction amount pursuant to the transitional guidance that is applicable until the IFRS 9 impairment requirements are applied in full and a €99 million reduction in the excess of loss allowances.

Risk-weighted assets went down from €150,137 million as at December 31, 2021 to €145,209 million as at June 30, 2022, a decrease of €4,928 million that comprised two opposing effects. On the one hand, the carrying amount of DZ BANK's long-term equity investment in R+V, which is accounted for using the equity method, fell in the first half of 2022. Yet on the other, the same period saw highly volatile movements in the capital markets, which led to a rise in market risk.

As at June 30, 2022, the DZ BANK banking group's **common equity Tier 1 capital ratio** was 13.3 percent, a decrease of 2.0 percentage points compared with December 31, 2021 (15.3 percent). The **Tier 1 capital ratio** of 14.8 percent calculated as at the reporting date was 2.0 percentage points lower than the figure as at December 31, 2021 too (16.8 percent). The **total capital ratio** also went down, from 18.5 percent as at December 31, 2021 to 16.4 percent as at the reporting date.

Fig. 12 provides an overview of the DZ BANK banking group's regulatory capital ratios.

Regulatory minimum capital requirements specified by the SREP

The minimum capital requirements that the DZ BANK banking group had to comply with in 2021 under the Supervisory Review and Evaluation Process for Basel Pillar 2 (SREP) comprised those components of Pillar 1 laid down as mandatory by law and those individually specified by the banking supervisor. Institution-specific requirements under the additional capital requirements in Pillar 2, determined in the outcome of the SREP conducted for the DZ BANK banking group in 2021, also had to be satisfied. In this process, the banking supervisor specified a mandatory add-on (**Pillar 2 requirement**) that is factored into the basis of calculation used to determine the threshold for the maximum distributable amount (MDA). Distributions are restricted if capital falls below the MDA threshold.

FIG. 12 – REGULATORY CAPITAL RATIOS[1]

	Jun. 30, 2022	Dec. 31, 2021
Capital		
Common equity Tier 1 capital (€ million)	19,287	23,021
Additional Tier 1 capital (€ million)	2,161	2,161
Tier 1 capital (€ million)	**21,449**	**25,183**
Total Tier 2 capital (€ million)	2,372	2,546
Own funds (€ million)	**23,821**	**27,729**
Risk-weighted assets		
Credit risk including long-term equity investments (€ million)	124,387	132,296
Market risk (€ million)	10,139	7,355
Operational risk (€ million)	10,683	10,487
Total (€ million)	**145,209**	**150,137**
Capital ratios		
Common equity Tier 1 capital ratio (%)	13.3	15.3
Tier 1 capital ratio (%)	14.8	16.8
Total capital ratio (%)	16.4	18.5

1 In accordance with the CRR transitional guidance.

The mandatory minimum capital requirements relevant to the DZ BANK banking group under the SREP, and their components, are shown in Fig. 13.

FIG. 13 – REGULATORY MINIMUM CAPITAL REQUIREMENTS ACCORDING TO SREP

%	2022	2021
Minimum requirement for common equity Tier 1 capital	4.50	4.50
Additional Pillar 2 capital requirement	0.96	0.98
Capital conservation buffer	2.50	2.50
Countercyclical capital buffer[1]	0.02	0.02
O-SII capital buffer	1.00	1.00
Mandatory minimum requirement for common equity Tier 1 capital	**8.98**	**9.01**
Minimum requirement for additional Tier 1 capital	1.50	1.50
Additional Pillar 2 capital requirement	0.32	0.33
Mandatory minimum requirement for Tier 1 capital	**10.80**	**10.84**
Minimum requirement for Tier 2 capital[2]	2.00	2.00
Additional Pillar 2 capital requirement	0.43	0.44
Mandatory minimum requirement for total capital	**13.22**	**13.27**

1 The value for the countercyclical capital buffer is recalculated at each reporting date. Unlike the other reported values, which apply to the entire financial year, the countercyclical capital buffers shown for 2022 and 2021 relate solely to the reporting dates.
2 The minimum requirement can also be satisfied with common equity Tier 1 capital.

Relaxation of the minimum capital requirements in response to the COVID-19 pandemic

Because of the COVID-19 pandemic, the supervisory authorities introduced various relief measures for banks, including in relation to the **binding minimum capital requirements**. For example, a bank can temporarily use up its capital conservation buffer and O-SII capital buffer without incurring sanctions. In such an eventuality, it must submit a capital conservation plan to the supervisory authorities. If, as a result, the combined capital buffer requirement and thus one of the three thresholds for the maximum distributable amount can no longer be met, the rules regarding the limits for distributions continue to apply. DZ BANK does not use the aforementioned relief measures and consequently they are not taken into account in Fig. 13.

Because of the COVID-19 pandemic, the supervisory authorities in some countries reduced the capital buffer rates used to calculate the countercyclical capital buffer, which is another part of the mandatory minimum capital requirements. In some cases, the authorities lowered the rates right down to 0 percent. In a general administrative act dated March 31, 2020, the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) [German Federal Financial Supervisory Authority] lowered the domestic countercyclical capital buffer rate for Germany to 0 percent. This rate continues to apply. The reduced capital buffer rates for Germany and other countries are factored into the calculation of the institution-specific countercyclical capital buffer rate.

Banks are also temporarily permitted to not comply with the **Pillar 2 capital recommendation** without this having any impact on a possible distribution. DZ BANK does not currently exercise this option.

Compliance with the minimum capital requirements

The **internal threshold values** and **external minimum targets** applicable to the DZ BANK banking group for the common equity Tier 1 capital ratio, the Tier 1 capital ratio, and the total capital ratio were exceeded as at June 30, 2022. The internal threshold values are shown in Fig. 2.

Leverage ratio

The **leverage ratio** of the DZ BANK banking group determined in accordance with the CRR transitional guidance went down by 2.8 percentage points from 7.3 percent as at December 31, 2021 to 4.5 percent as at June 30, 2022. This decline was mainly due to the ending of the temporary exemption from including balances with central banks. These exposures have had to be included again since April 1, 2022. As at the reporting date, balances with central banks amounted to €93.6 billion. A significant fall in Tier 1 capital from €25.2 billion as at December 31, 2021 to €21.4 billion as at June 30, 2022 also contributed to the decrease in the leverage ratio.

As at June 30, 2021, the banking supervisor introduced a binding **external minimum target** of 3.0 percent in connection with initial application of CRR II. Since the DZ BANK banking group had used the aforementioned temporary exemption for balances with central banks, the external minimum target stood at 3.26 percent until this exemption expired on March 31, 2022. Since April 1, 2022, the external minimum target has again been 3.0 percent.

Both the **internal threshold value** of 4.0 percent for the leverage ratio and the **external minimum target** of 3.0 percent specified by the banking regulator were exceeded as at June 30, 2022. Based on current projections, it is expected that these minimum requirements will also be satisfied in the second half of the year.

MREL ratio

The calculation of the MREL ratio was changed with effect from January 1, 2022. The MREL ratio is now calculated as the ratio of the total of regulatory own funds and eligible bail-in-able liabilities to the total risk exposure amount of the DZ BANK banking group.

The following quantitative disclosures for the MREL ratio are based on the amended calculation method. The values as at December 31, 2021 have been adjusted accordingly and therefore differ from those shown in the 2021 risk report.

The **MREL ratio** measured for the DZ BANK banking group was 35.4 percent as at June 30, 2022 (December 31, 2021: 37.3 percent). The lower ratio compared to the end of 2021 is explained by the decline in common equity Tier 1 capital as a result of temporary accounting effects at R+V of €3,909 million and by a reduction in senior preferred liabilities due to transactions that matured, which meant that the liabilities were no longer eligible for the MREL volume.

DZ BANK's Board of Managing Directors set the **internal threshold value** for the DZ BANK banking group's MREL ratio for 2022 at 26.8 percent. The **external minimum target** for 2022 is 25.1 percent. In 2021, neither an internal threshold value nor an external minimum target applied to the MREL ratio. The MREL ratio measured as at June 30, 2022 was above the internal threshold value and the external minimum target.

Subordinated MREL ratio

The subordinated MREL ratio has been calculated and reported to the supervisory authorities since the start of this year. In contrast to the MREL ratio, the subordinated MREL ratio only takes into account subordinated MREL-eligible liabilities.

The **subordinated MREL ratio** of the DZ BANK banking group was 25.0 percent as at June 30, 2022 (December 31, 2021: 26.5 percent). The decline in common equity Tier 1 capital was due to temporary accounting effects at R+V of €3,909 million that were not offset by the €582 million increase in senior non-preferred liabilities.

The **internal threshold value** applicable to the subordinated MREL ratio of the DZ BANK banking group was 24.8 percent for the first six months of the year. For the second half of 2022, this value is 25.5 percent. The supervisory authorities specified an **external minimum target** of 23.8 percent for 2022 as a whole. In 2021, neither an internal threshold value nor an external minimum target applied to the MREL ratio. The subordinated MREL ratio measured as at June 30, 2022 was above the internal threshold value and the external minimum target.

6.2.3 R+V Versicherung AG insurance group

The regulatory solvency requirements for insurance companies and insurance groups provide a means of evaluating the overall risk position in the R+V Versicherung AG insurance group. The R+V Versicherung AG insurance group met the solvency requirements under Solvency II as at June 30, 2022.

The projections applied in the internal planning show that the R+V Versicherung AG insurance group's solvency ratio will continue to exceed the solvency requirement as at December 31, 2022.

Bank sector

7 Credit risk

7.1 Overview of the credit risk situation

Economic conditions worsened in the first half of 2022. Various factors contributed to this: the rise in interest rates, inflation, the negative economic impact of the war in Ukraine, supply chain problems brought on by COVID-19-related stoppages in production and logistics in China, and lower growth forecasts.

The credit risk situation of the entities in the Bank sector did not worsen materially despite these unfavorable macroeconomic conditions. The exposure affected by the acute global crises was modest as at the reporting date, and the impairment requirement that emerged in the first six months of 2022 was at a moderate level. Changes in the credit portfolio will be monitored closely in the second half of the financial year, especially in view of these conditions.

7.2 Lending volume

7.2.1 Asset class structure of the credit portfolio

The reporting to the Board of Managing Directors on concentrations of credit risk includes a presentation of the credit portfolio broken down by asset class. This is done by dividing the credit portfolio into business-related homogeneous segments on the basis of characteristics such as industry code to reflect the sector, product type, and the rating system used to determine the credit rating. The characteristics are selected in such a way that the segments are subject to uniform risk drivers.

In its role as central institution for the Volksbanken Raiffeisenbanken cooperative financial network, DZ BANK provides funding for the entities in the Bank sector and for the cooperative banks. For this reason, the cooperative banks, which are assigned to the asset class **entities within the cooperative financial network**, account for one of the largest loans and receivables items in the group's credit portfolio.

DZ BANK also supports the cooperative banks in the provision of larger-scale funding to corporate customers. Corporate banking exposures relate to business with commercial customers, which is assigned mainly to one of the following asset classes: corporates, commercial real estate customers, and asset-based lending/project finance. The syndicated business resulting from the corporate customer lending business, the direct business of DZ BANK, the real estate lending business of DZ HYP and BSH, and DZ HYP's local authority lending business determine the asset-class breakdown for the remainder of the portfolio.

The total lending volume increased by 4 percent overall in the first half of the year, from €430.7 billion as at December 31, 2021 to €450.0 billion as at June 30, 2022. The rise in the lending volume was mainly due to an increase in volume in the entities within the cooperative financial network and corporates asset classes, which went up by €10.1 billion and €6.1 billion respectively compared with the end of 2021. DZ BANK accounted for most of the increase, which was driven by lending business (primarily support loan business and money market loans) with entities in the cooperative financial network and business performance in the Corporate Banking and Structured Finance divisions.

As at June 30, 2022, a significant proportion (39 percent) of the lending volume was concentrated in the financial sector (December 31, 2021: 38 percent). In addition to the local cooperative banks, the borrowers in this customer segment comprised banks from other sectors of the banking industry and other financial institutions.

Fig. 14 shows the breakdown of the credit portfolio by asset class.

FIG. 14 – BANK SECTOR: LENDING VOLUME, BY ASSET CLASS

€ billion	Jun. 30, 2022	Dec. 31, 2021
Entities within the cooperative financial network	133.7	123.6
Financials	44.0	40.6
Corporates	73.2	67.1
Asset-based lending/project finance	11.6	11.9
Public sector	39.6	43.5
Real estate (commercial and retail customers)	119.6	117.9
Retail business (excluding real estate customers)	17.5	16.7
ABSs and ABCPs[1]	9.0	7.4
Other	1.9	1.9
Total	**450.0**	**430.7**

1 ABSs = asset-backed securities, ABCPs = asset-backed commercial paper.

7.2.2 Geographical structure of the credit portfolio

Fig. 15 shows the geographical distribution of the credit portfolio by country group. The lending volume is assigned to the individual country groups using the International Monetary Fund's breakdown, which is updated annually. The relevant country is the one in which the economic risk arises.

FIG. 15 – BANK SECTOR: LENDING VOLUME, BY COUNTRY GROUP

€ billion	Jun. 30, 2022	Dec. 31, 2021
Germany	377.3	362.4
Other industrialized countries	56.3	53.9
of which: USA	9.3	8.5
of which: France	6.4	6.5
of which: Austria	5.8	5.2
Advanced economies	2.8	2.5
Emerging markets	9.2	9.0
Supranational institutions	4.4	2.9
Total	**450.0**	**430.7**

As at June 30, 2022, 96 percent (December 31, 2021: 97 percent) of the total lending volume was concentrated in Germany and other industrialized countries.

7.2.3 Residual maturity structure of the credit portfolio

The breakdown of the credit portfolio by residual maturity as at June 30, 2022 presented in Fig. 16 shows that the lending volume had increased by €10.9 billion in the **short-term maturity band** compared with December 31, 2021. This was primarily attributable to DZ BANK.

FIG. 16 – BANK SECTOR: LENDING VOLUME, BY RESIDUAL MATURITY

€ billion	Jun. 30, 2022	Dec. 31, 2021
≤ 1 year	113.9	103.0
> 1 year to ≤ 5 years	107.7	114.6
> 5 years	228.4	213.1
Total	**450.0**	**430.7**

By contrast, there was a decrease of €6.9 billion in the **medium-term maturity band** that was attributable to BSH.

The lending volume in the **long-term maturity band** increased by €15.3 billion, which was mainly accounted for by BSH and DZ BANK.

7.2.4 Rating structure of the credit portfolio

Fig. 17 shows the lending volume by rating class according to the VR credit rating master scale. The proportion of the total lending volume represented by rating classes 1A to 3A (investment grade) was 87 percent as at June 30, 2022 (December 31, 2021: 85 percent). Rating classes 3B to 4E (non-investment grade) represented 12 percent as at the reporting date (December 31, 2021: 14 percent). Defaults, represented by rating classes 5A to 5E, accounted for less than 1 percent of the total lending volume as at June 30, 2022, which was unchanged compared with the end of 2021.

FIG. 17 – BANK SECTOR: LENDING VOLUME, BY RATING CLASS

€ billion		Jun. 30, 2022	Dec. 31, 2021
Investment grade	1A	30.5	32.7
	1B	7.8	7.6
	1C	147.2	135.8
	1D	14.0	13.4
	1E	15.9	14.4
	2A	18.4	16.7
	2B	28.1	25.7
	2C	27.8	23.3
	2D	32.6	30.8
	2E	40.9	39.7
	3A	27.8	25.8
Non-investment grade	3B	15.3	17.4
	3C	12.9	14.7
	3D	10.0	9.6
	3E	4.4	6.2
	4A	2.4	2.9
	4B	3.4	3.5
	4C	1.3	1.2
	4D	1.8	1.7
	4E	2.3	1.6
Default		3.2	3.4
Not rated		2.3	2.6
Total		**450.0**	**430.7**

In the analysis of **individual concentrations**, the ten counterparties associated with the largest lending volumes accounted for 5 percent of total lending as at June 30, 2022. This was the same as the figure at the end of 2021. These counterparties largely comprised borrowers from the public sector domiciled in Germany and from the financial sector (including the cooperative banks) with investment-grade ratings.

7.2.5 Collateralized lending volume

Fig. 18 shows the breakdown of the collateralized lending volume at overall portfolio level by type of collateral.

FIG. 18 – BANK SECTOR: COLLATERAL VALUE, BY TYPE OF COLLATERAL

€ billion	Jun. 30, 2022	Dec. 31, 2021
Guarantees, indemnities, risk subparticipation	7.2	7.3
Credit insurance	5.0	4.9
Land charges, mortgages, registered ship and aircraft mortgages	117.4	116.0
Pledged loans and advances, assignments, other pledged assets	1.5	2.3
Financial collateral	1.9	1.8
Other collateral	0.3	0.2
Total collateral	**133.2**	**132.6**
Lending volume	378.1	355.3
Uncollateralized lending volume	**244.9**	**222.7**
Collateralization rate (%)	**35.2**	**37.3**

In the case of **traditional lending business**, lending volume is generally reported as a gross figure before the application of any offsetting agreements, whereas the gross lending volume in the **derivatives and money**

market business is shown on a netted basis. In the derivatives and money market business, collateral values are relatively low and are in the form of personal and financial collateral. In the **securities business**, there is generally no further collateralization to supplement the collateral already taken into account. For this reason, securities business is not included in the presentation of the collateralized lending volume.

The total collateral value had risen to €133.2 billion as at June 30, 2022, compared with €132.6 billion as at December 31, 2021. The collateralization rate was 35.2 percent as at the reporting date (December 31, 2021: 37.3 percent).

7.2.6 Volume of closely monitored and non-performing loans

Closely monitored loans and forborne exposure

Fig. 19 shows the volume of loans on the three monitoring lists – **yellow list**, **watchlist**, and **default list** – and the forborne exposure also included in these lists. A further item in the table shows the exposure managed as forborne but not subject to intensified loan management, i.e. not included in the lists.

FIG. 19 – BANK SECTOR: CLOSELY MONITORED LENDING VOLUME AND FORBORNE EXPOSURE

€ million	Jun. 30, 2022	Dec. 31, 2021
Yellow list lending volume	**3,779**	**3,348**
of which: forborne exposure	125	120
Watchlist lending volume	**5,685**	**4,397**
of which: forborne exposure	1,074	753
Default list lending volume	**3,175**	**3,363**
of which: forborne exposure	1,726	1,878
Total lending volume on monitoring lists	**12,639**	**11,109**
of which: forborne exposure	2,925	2,751
Off-monitoring-list forborne exposure	**427**	**461**
Total forborne exposure[1]	**3,353**	**3,213**

1 Both on and off the monitoring lists.

The closely monitored lending volume rose by 14 percent from December 31, 2021 to June 30, 2022. This increase was largely due to customers of DZ BANK and was primarily a result of the war in Ukraine. This was also accompanied by a rise of 6 percent in the closely monitored forborne exposure. Including the off-monitoring-list forborne exposure, the overall growth of the forborne exposure totaled 4 percent.

Non-performing loans

As at June 30, 2022, the volume of non-performing loans had fallen to €3.2 billion from €3.4 billion as at December 31, 2021. The year-on-year decrease, which was mainly attributable to the reduction in the portfolio at DVB, was accompanied by a decline in the NPL ratio from 0.8 percent to 0.7 percent.

Fig. 20 shows key figures relating to the volume of non-performing loans.

FIG. 20 – BANK SECTOR: KEY FIGURES FOR NON-PERFORMING LOANS

	Jun. 30, 2022	Dec. 31, 2021
Total lending volume (€ billion)	450.0	430.7
Volume of non-performing loans (€ billion)[1]	3.2	3.4
Balance of loss allowances (€ billion)[2]	1.3	1.5
Coverage ratio (%)[3]	69.6	75.7
NPL ratio (%)[4]	0.7	0.8

1 Volume of non-performing loans excluding collateral.
2 IFRS specific loan loss allowances at stage 3, including provisions.
3 Loss allowances as specified in footnote 2, plus collateral, as a proportion of the volume of non-performing loans.
4 Volume of non-performing loans as a proportion of total lending volume.

7.3 Credit portfolios particularly affected by acute global crises

The following sections describe credit portfolios in which the effects of acute global crises were more noticeable than in the rest of the credit portfolios. However, no significantly heightened risk was as yet evident in connection with the exposures in the affected portfolios as at the reporting date. They are described solely for reasons of transparency. The figures presented below are included in the disclosures for the lending volume as a whole (see section 7.2).

7.3.1 Credit portfolios particularly affected by the COVID-19 pandemic

The **automotive sector** has been in a state of upheaval for a number of years and is faced with a number of issues, notably low margins and huge capital requirements. COVID-19 lockdowns in China, shortages of base products (especially semiconductors), and the war in Ukraine led to supply chain disruptions that impacted on production in the first six months of the year. Increased costs for commodities, energy, and transportation also weighed heavily. DZ BANK's automotive finance portfolio, which is assigned to the corporates segment, is still deemed to be stable with a good credit quality. It is assumed that the general recovery in demand for vehicles will continue. However, this positive trend may slow because of the increasing strains on the sector. The European Parliament's decision to end the sale of vehicles with internal combustion engines by 2035 will further accelerate the switch to electric vehicles and so keep the pressure on borrowers to transform. The volume of lending in DZ BANK's automotive finance portfolio came to €5.0 billion as at June 30, 2022 (December 31, 2021: €4.5 billion).

DZ HYP's lending business with corporates includes financing for **hotels, department stores, and shopping malls**. In 2020 and 2021, these asset classes were identified as being subject to a heightened degree of uncertainty in view of the COVID-19 pandemic, government-imposed safeguards, and potential long-term structural changes. Nonetheless, those credit portfolios have shown themselves to be crisis-resistant overall due to their conservative finance structures, the quality of the real estate, and borrower credit ratings. No defaults occurred. In the last two years, the impact of the pandemic has been taken into account in the revenue projections and in appraisals to value mortgage properties as well as in the annual financial statements and ratings of borrowers. At present, the asset classes concerned are no longer subject to any significantly increased uncertainty. Nonetheless, there is the risk that hotels will be impacted heavily once more by COVID-19 if case numbers rise again in the autumn of this year and governments impose safeguards. Added to this is the risk that muted economic growth and rising inflation could have a negative effect on willingness to travel, which has picked up again recently.

Increased levels of uncertainty surround loans to **project developers and property developers** due to the increases in the cost of materials and energy since 2021 related to the pandemic and to shortages of materials and staff. This trend was further exacerbated by the war in Ukraine. Project developers and property developers responded to this by delaying the start of new projects.

As at June 30, 2022, the **volume** of corporate loans extended by DZ HYP amounted to a total of €47.3 billion (December 31, 2021: €47.6 billion). Of this total, the following amounts were attributable to the asset classes

particularly affected by the COVID-19 pandemic as at the reporting date (figures as at December 31, 2021 shown in parentheses):
- Hotel financing: €2.8 billion (€2.7 billion)
- Department store financing: €0.6 billion (€0.7 billion)
- Shopping mall financing: €2.9 billion (€2.9 billion)
- Property developer and project developer finance: €5.4 billion (€4.5 billion)

The **cruise ship industry**, for which **DZ BANK** provides funding (comprising cruise ship finance and the financing of cruise ship building), was also significantly impacted by the COVID-19 pandemic. However, unlike the portfolios previously referred to, the financing provided for the cruise ship industry has been assigned to the credit portfolios with increased risk content (see section 7.4.2).

The COVID-19 pandemic may continue to have an adverse impact on credit risk in the Bank sector in the second half of 2022. The rise in infection levels from the autumn onward, and the measures taken by governments to contain them, will together have a significant influence on the extent of the negative impact of the pandemic.

7.3.2 Credit portfolios particularly affected by the war in Ukraine and the Russian gas embargo

In the first half of the year, the **war in Ukraine** had a significantly negative impact on the credit ratings of borrowers in the countries affected directly (Russia, Ukraine, and Belarus). The exposure of Bank sector entities in these countries totaled €765 million as at June 30, 2022 (December 31, 2021: €959 million). The proportion of the Bank sector's total lending volume as at the reporting date was less than 1 percent, as was also the case at the end of 2021. The exposure was notable for export and trade finance as well as project finance and securities.

Fig. 21 shows the breakdown of the net lending volume by country affected.

FIG. 21 – BANK SECTOR: NET LENDING VOLUME IN COUNTRIES AFFECTED DIRECTLY BY THE WAR IN UKRAINE

€ million	Jun. 30, 2022	Dec. 31, 2021
Russia	184	222
Belarus	12	13
Ukraine	3	15
Total	**199**	**250**

Over and above the countries directly involved in the war in Ukraine, the conflict has a negative impact globally on the credit ratings of borrowers. This was reflected in the figures for the Bank sector's total lending volume (see section 7.2). The closely monitored lending volume had increased as at the reporting date as a result of the war in Ukraine (see section 7.2.6).

Initial analysis of the impact of the threatened **Russian gas embargo** on credit risk in the Bank sector was carried out. Individual parts of the portfolio were identified as being affected. No material negative impact on credit risk is currently evident.

7.3.3 Credit portfolios particularly affected by the Taiwan crisis

Tensions between China and Taiwan escalated significantly following a visit by a high-level US government delegation to Taiwan at the start of August 2022. China held military maneuvers just off the coast of Taiwan in the first half of August. It is currently assumed that the conflict between China and Taiwan will ease now that these maneuvers have ended. Nonetheless, the risk of unwelcome military activity has gone up significantly, which could lead to an increase in credit risk in the second half of 2022.

The net lending volume disbursed – predominantly by DZ BANK – to counterparties in Taiwan as at June 30, 2022 amounted to €311 million (December 31, 2021: €131 million) . Taiwan was assigned to the 1D rating class on the credit rating master scale as at June 30, 2022, the same rating as at December 31, 2021. The exposure is characterized by short-dated trade finance activities and longer-term project finance.

No increase in credit risk can currently be discerned as a result of the Taiwan crisis.

7.4 Credit portfolios with increased risk content

The credit portfolios with increased risk content are analyzed separately because of their significance for the risk position. The figures presented below are included in the above analyses of the total lending volume (see section 7.2).

7.4.1 Loans and advances to borrowers in eurozone periphery countries

As at June 30, 2022, loans and advances to borrowers in the countries directly affected by the **economic divergence in the eurozone** amounted to €5,407 million (December 31, 2021: €6,465 million). This mainly consisted of securities business. The decrease was mainly due to reductions in fair value and to disposals and maturities at DZ HYP.

Fig. 22 shows the borrower structures for the lending volume in the eurozone periphery countries.

FIG. 22 – BANK SECTOR: LOANS AND ADVANCES TO BORROWERS IN EUROZONE PERIPHERY COUNTRIES[1]

€ million	Jun. 30, 2022	Dec. 31, 2021
Portugal	**560**	917
of which: public sector	477	827
of which: non-public sector	83	90
of which: financial sector	-	-
Italy	**2,582**	3,002
of which: public sector	2,168	2,548
of which: non-public sector	414	454
of which: financial sector	131	144
Spain	**2,265**	2,547
of which: public sector	1,382	1,625
of which: non-public sector	883	922
of which: financial sector	320	273
Total	**5,407**	**6,465**
of which: public sector	4,027	4,999
of which: non-public sector	1,380	1,466
of which: financial sector	452	417

1 Unlike the other presentations of lending volume, traditional lending business in this case includes long-term equity investments.

7.4.2 Finance for cruise ships and cruise ship building

Cruise ship finance

Cruise ship finance in the Bank sector is mainly brought together under **DZ BANK**. The shipping companies that have been financed currently have adequate liquidity buffers. However, these buffers could decrease to a critical level if new dangerous variants of the COVID-19 virus suppress demand for cruises. Although the Omicron variant caused trips to either be cancelled or ended early in December 2021 and January 2022, the impact was limited. Occupancy and booking figures of the affected shipping companies showed an upward trend during the reporting period. However in the future, these companies will need to return to past revenue levels so that they can meet the increased levels of payment obligations that have arisen as a result of repayments being deferred in the past two years. The war in Ukraine only had a small impact on the cruise ship business.

As at June 30, 2022, the volume of cruise ship finance amounted to €1,059 million (December 31, 2021: €1,099 million). Of this total, €671 million was covered by export credit insurance as at June 30, 2022 (December 31, 2021: €678 million).

Finance for cruise ship building

A distinction is made between cruise ship finance and the financing of cruise ship building. This segment, which likewise only affects **DZ BANK** in the Bank sector, is still undergoing consolidation. In consultation with the parties ordering cruise ships, the order book has been stretched out, thereby ensuring a basic level of capacity utilization in the next few years. However, the shipyards that build cruise ships face the challenge of significantly reducing their production capacity and workforce capacity. The shipyards currently find themselves in the middle of this transformation process, which – together with rising energy and procurement costs – is also likely to affect customer credit quality in the second half of the year. This subportfolio is therefore classified as a portfolio with increased risk content.

The lending volume related to the financing of cruise ship building stood at €357 million as at June 30, 2022 (December 31, 2021: €341 million).

7.5 Risk position

7.5.1 Risks in the entire credit portfolio

The risk capital requirement for credit risk is based on a number of factors, including the size of single-borrower exposures, individual ratings, collateral, and the industry sector of each exposure.

As at June 30, 2022, the **risk capital requirement** amounted to €4,469 million (December 31, 2021: €5,037 million) with a **limit** of €6,437 million (December 31, 2021: €7,188 million). The decrease was mainly attributable to the reduced portfolios of DZ HYP in eurozone periphery countries.

Fig. 23 shows the credit value-at-risk together with the average probability of default and expected loss.

FIG. 23 – BANK SECTOR: FACTORS DETERMINING THE CREDIT VALUE-AT-RISK

	Average probability of default (%)		Expected loss (€ million)		Credit value-at-risk[1] (€ million)	
	Jun. 30, 2022	Dec. 31, 2021	Jun. 30, 2022	Dec. 31, 2021	Jun. 30, 2022	Dec. 31, 2021
Traditional lending business	0.4	0.5	423	432	2,431	2,448
Securities business	0.1	0.2	34	44	977	1,498
Derivatives and money market business	0.1	0.2	13	13	293	238
Total			469	489	3,701	4,184
Average	0.3	0.4				

Not relevant

1 As it is not possible to show the risk capital requirement including the capital buffer requirement in the analysis of credit-risk-bearing instruments, the risk capital requirement is presented without the capital buffer requirement.

7.5.2 Risks in the credit portfolios with increased risk content

The risk capital requirement for **Bank sector** credit portfolios exposed to increased credit risk is shown in Fig. 24.

FIG. 24 – BANK SECTOR: CREDIT VALUE-AT-RISK[1] FOR CREDIT PORTFOLIOS WITH INCREASED RISK CONTENT

€ million	Jun. 30, 2022	Dec. 31, 2021
Eurozone periphery countries	646	1,109
Cruise ship finance	13	13
Finance for cruise ship building	4	4

1 Excluding decentralized capital buffer requirement.

The decline in the credit value-at-risk for the Bank sector entities' exposure in the **eurozone periphery countries** was in line with the change in the loans and advances to borrowers in these countries.

The credit value-at-risk to finance **cruise ships** and **cruise ship building** amounted to €13 million and €4 million respectively as at June 30, 2022. The figures were unchanged in comparison with December 31, 2021 and stemmed entirely from DZ BANK.

8 Equity investment risk

The **carrying amounts of long-term equity investments** relevant for the measurement of equity investment risk amounted to €2,819 million as at June 30, 2022 (December 31, 2021: €2,953 million).

The **risk capital requirement** for equity investment risk was calculated to be €969 million as at the reporting date (December 31, 2021: €996 million). The **limit** was €1,230 million (December 31, 2021: €1,220 million).

9 Market risk

9.1 Value-at-risk

Fig. 25 shows the average, maximum, and minimum values-at-risk measured over the first half of the year, including a further breakdown by type of market risk. Furthermore, Fig. 26 shows the change in market risk by trading day in the reporting period. In both figures, the value-at-risk relates to the **trading and banking books for regulatory purposes**.

The value-at-risk for the **interest-rate risk in the banking book for regulatory purposes** amounted to €45 million as at June 30, 2022 (December 31, 2021: €10 million).

The significant increase in the key value-at-risk figures for interest-rate risk, spread risk, and aggregate risk was primarily attributable to the high level of market volatility in the first half of 2022.

9.2 Risk capital requirement

As at June 30, 2022, the risk capital requirement for **market risk** amounted to €3,863 million (December 31, 2021: €3,713 million) with a limit of €6,680 million (December 31, 2021: €5,725 million).

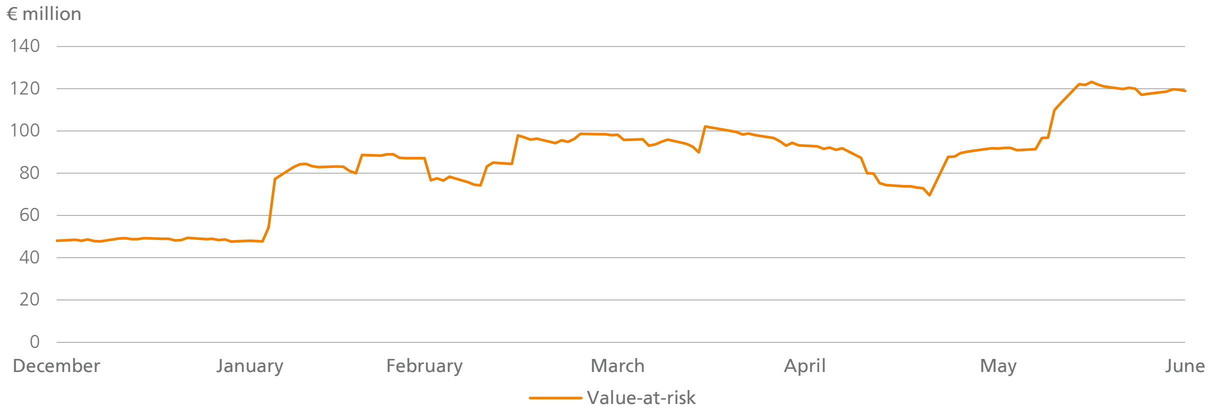
The Bank sector's risk capital requirement encompasses the **asset-management risk of UMH**. The asset-management risk as at June 30, 2022 amounted to €295 million (December 31, 2021: €347 million). The decline in risk was largely explained by the trend in capital markets.

FIG. 25 – BANK SECTOR: CHANGE IN MARKET RISK BY RISK SUBTYPES[1, 2]

€ million	Interest-rate risk	Spread risk	Equity risk[3]	Currency risk	Commodity risk	Diversification effect[4,5]	Aggregate risk
Jun. 30, 2022	**42**	**76**	**13**	**4**	**3**	**-20**	**119**
Average	28	60	12	3	3	-21	85
Maximum	50	76	14	6	4	-26	123
Minimum	9	41	11	1	2	-17	48
Dec. 31, 2021	**10**	**43**	**14**	**2**	**2**	**-22**	**48**

1 The disclosures relate to general market risk and spread risk. Asset-management risk is not included.
2 Value-at-risk with 99.0% confidence level, 1-day holding period, 1-year observation period, based on a central market risk model for the Bank sector. Concentrations and effects of diversification were taken fully into account when calculating the risks.
3 Including funds, if not broken down into constituent parts.
4 Total effects of diversification between the types of market risk for all consolidated management units.
5 The minimum and maximum amounts for the different subcategories of market risk may stem from different points in time during the reporting period. Consequently, they cannot be aggregated to produce the minimum or maximum aggregate risk due to the diversification effect.

FIG. 26 – BANK SECTOR: CHANGE IN MARKET RISK BY TRADING DAY[1]



1 Value-at-risk with 99.0% confidence level, 1-day holding period, 1-year observation period, based on a central market risk model for the Bank sector. Concentrations and effects of diversification were taken fully into account when calculating the risks.

10 Technical risk of a home savings and loan company

As at June 30, 2022, the **capital requirement** for the technical risk of a home savings and loan company amounted to €689 million (December 31, 2021: €639 million) with a **limit** of €720 million (December 31, 2021: €706 million). In the prevailing market conditions, stronger effects – that therefore lead to increased risk – result from the changes in the parameters 'customer behavior' and 'decline in new business' that are simulated in the risk calculation.

11 Business risk and reputational risk

As at June 30, 2022, the **risk capital requirement** for business risk (including reputational risk) amounted to €89 million (December 31, 2021: €407 million). The **limit** was €280 million as at the reporting date (December 31, 2021: €640 million). Reputational risk is included in the figures shown.

The decrease in risk was attributable to an improvement in the budgeted figures taken from the IFRS income statement that are used to calculate risk. The limit was also lowered to tie in with this decline in risk.

12 Operational risk

12.1 Impact of the war in Ukraine

The monitoring of sanctions necessitates manual transaction checks that entail an increased workload. This may result, for example, in delays to the execution of transactions, increased strain on staff or, if applicable, penalty interest payments for trading that involves securities subject to sanctions. As at June 30, 2022, the relevant risk indicators revealed latent increased risk. Risk indicators are intended to enable risk trends and concentrations to be identified at an early stage and to detect weaknesses in business processes.

12.2 Losses

Losses from operational risk do not follow a consistent pattern. The overall risk profile can be seen from the total losses incurred over the long term and is shaped by a small number of large losses. Over the course of time, regular fluctuations are evident in the pattern of losses as the frequency of relatively large losses in each individual case is very low. Presenting the change in losses meaningfully therefore requires a sufficiently long and unchanging time horizon for reporting purposes. The data is therefore selected from the loss history for the past four quarters and on the basis of the date on which the expense is recognized in the income statement.

The past four quarters – that is, the period from July 1, 2021 to June 30, 2022 – represent the relevant reporting period for an analysis of net losses. The internal net losses from claims reported in this period and classified by operational risk subtype are shown and compared with their long-term mean in Fig. 27.

FIG. 27 – BANK SECTOR: NET LOSSES[1] BY OPERATIONAL RISK SUBTYPE

Proportion of total net losses (%)	July 1, 2021– Jun. 30, 2022	Long-term mean[2]
Compliance risk	38.8	44.4
Legal risk	38.1	36.7
Information risk including ICT risk	1.5	5.5
Security risk	0.7	2.0
Outsourcing risk	1.1	0.6
Project risk	5.1	0.8
Other operational risk	14.6	10.0

1 Internal losses.
2 The long-term mean is derived from loss data recorded since 2006.

In the past four quarters, internal losses were dominated by **compliance risk** and **legal risk**. In both of these risk subtypes, recognizing a provision on the basis of an alleged dereliction of duty in connection with capital markets transactions at the same time as reversing a provision for the potential reimbursement of fees led to a slight increase in losses overall. The proportion of the total internal losses attributable to the legal risk subtype thus continued to be above the long-term mean. Net losses related to **other operational risk** rose compared with the figure as at December 31, 2021 and were also higher than the long-term mean calculated as at June 30, 2022. The increase was particularly attributable to a loss that occurred as a result of the erroneous exercising of options.

By contrast, net losses for the **other risk subtypes** as at June 30, 2022 were on a par with the end of 2021, although the proportion of the total internal net losses attributable to these risk subtypes had declined owing to the increase in losses attributable to compliance risk, legal risk, and other operational risk.
Losses did not reach a critical level relative to the expected loss from operational risk at any point in the reporting year.

12.3 Risk position

The **risk capital requirement** for operational risk was calculated at €930 million as at June 30, 2022 (December 31, 2021: €941 million) with a **limit** of €1,112 million (December 31, 2021: €1,102 million).

Fig. 28 shows the structure of the risk profile for operational risk in the Bank sector and at DZ BANK based on **risk subtype**.

FIG. 28 – BANK SECTOR: DISTRIBUTION OF RISK CAPITAL REQUIREMENT FOR OPERATIONAL RISK, BY RISK SUBTYPE[1]

%	Jun. 30, 2022	Dec. 31, 2021
Compliance risk	32.0	32.5
Legal risk	20.0	20.6
Information risk including ICT risk	14.4	14.3
Security risk	5.6	5.5
Outsourcing risk	6.5	6.5
Project risk	7.5	7.4
Other operational risk	13.9	13.3

1 Proportion of the Bank sector's risk capital requirement attributable to each risk subtype.

The distribution of the risk capital requirement among the operational risk subtypes remained largely unchanged as at June 30, 2022 compared with the end of the previous year. In the first half of 2022, **compliance risk** and **legal risk** accounted for the most significant proportions of the risk capital requirement. A large proportion of the risk capital requirement for these two risk subtypes was determined by the recorded losses and by the hypothetical risk scenarios for changes to case law and for breaches of sanctions and embargoes. The proportion of the risk capital requirement attributable to legal risk and compliance risk decreased slightly compared with December 31, 2021 due to the reversal of a provision for potential reimbursements of fees. The largest increase in the risk capital requirement was seen in **other operational risk**. It largely resulted from a loss associated with the erroneous exercising of options and from adjustments to the hypothetical scenarios for the incorrect communication/interpretation of business information and incorrect execution of transactions and processes.

Insurance sector

13 Actuarial risk

13.1 Impact of the war in Ukraine

In relation to credit insurance policies assigned to the **reinsurance business**, R+V imposed extensive underwriting restrictions in respect of Russian and Ukrainian counterparties in the first half of the year. A small volume of claims were recorded for these counterparties during the reporting period. The war in Ukraine did not lead to any significant increase in non-life actuarial risk, within which risk from credit insurance policies is included.

13.2 Claims rate trend in non-life insurance

Various storms that occurred in the first half of the year adversely resulted in expenses for the **direct non-life insurance business** of around €152 million. Reinsurance treaties are in place in order to reduce actuarial risk. The individual events that have occurred so far do not yet currently qualify for the reinsurance treaty for natural disaster events. Increased costs for basic claims, natural disaster claims, and major claims, combined with lower gains on settlements, led to an annual claims rate for the year as a whole and for the reporting year that was higher than in the comparative prior-year period.

In the **inward reinsurance business**, there were major claim events with claims incurred of €165 million in the first half of the year. The ratios for basic claims and medium claims declined, whereas the large claims ratio went up. Thanks to the provisions already recognized, no additional COVID-19-related expense is predicted for this year.

13.3 Risk position

As at June 30, 2022, the **overall solvency requirement** for **life actuarial risk** amounted to €655 million (December 31, 2021: €343 million) with a **limit** of €850 million (December 31, 2021: €600 million). The increase in risk was due to higher lapse risk resulting from the rise in interest rates during the first half of 2022.

As at the reporting date, the **overall solvency requirement** for **health actuarial risk** was €153 million (December 31, 2021: €231 million) with a **limit** of €300 million (December 31, 2021: €350 million). The decrease in risk was due to the decline in insurance liabilities as a consequence of the rise in interest rates.

As at June 30, 2022, the **overall solvency requirement** for **non-life actuarial risk** amounted to €1,775 million (December 31, 2021: €1,939 million) with a **limit** of €3,200 million (December 31, 2021: €4,600 million). The reduction in risk was largely due to decreased insurance liabilities as a consequence of the rise in interest rates.

14 Market risk

14.1 Change in lending volume

In accordance with the breakdown specified in Solvency II, the bulk of credit risk within market risk is assigned to spread risk. The capital requirements for spread risk are calculated using a factor approach based on the relevant lending volume.

As at June 30, 2022, the **total lending volume** of R+V had declined by 13 percent to €90.8 billion (December 31, 2021: €104.5 billion). This decrease was primarily the result of a fall in the fair values of fixed-income securities as a consequence of the rise in interest rates.
The volume of lending in the **home finance** business totaled €14.2 billion as at June 30, 2022 (December 31, 2021: €13.1 billion). Of this amount, 85 percent (December 31, 2021: 87 percent) was accounted for by loans for less than 60 percent of the value of the property.

The volume of home finance was broken down by finance type as at the reporting date as follows (figures as at December 31, 2021 shown in parentheses):
– Consumer home finance: €12.8 billion (€11.9 billion)
– Commercial home finance: €0.1 billion (€0.1 billion)
– Commercial finance: €1.3 billion (€1.1 billion).

In the case of home finance, the entire volume disbursed is backed by traditional loan collateral.

The financial sector and the public sector, which are the dominant **asset classes**, together accounted for 65 percent of the total lending volume as at June 30, 2022 (December 31, 2021: 67 percent).

The explanation of the asset class concept in the Bank sector (see section 7.2.1) applies analogously to the Insurance sector. Fig. 29 shows the breakdown of the lending volume by asset class.

FIG. 29 – INSURANCE SECTOR: LENDING VOLUME, BY ASSET CLASS

€ billion	Jun. 30, 2022	Dec. 31, 2021
Financials	39.8	46.7
Corporates	13.3	16.3
Public sector	19.0	22.9
Real estate (commercial and retail customers)	17.3	16.3
ABSs and ABCPs[1]	1.6	1.5
Other	-	0.8
Total	**90.8**	**104.5**

1 ABSs = asset-backed securities, ABCPs = asset-backed commercial paper.

An analysis of the **geographical breakdown** of the lending volume in Fig. 30 reveals that Germany and other industrialized countries accounted for the lion's share – 91 percent – of the lending volume as at June 30, 2022 (December 31, 2021: 90 percent).

FIG. 30 – INSURANCE SECTOR: LENDING VOLUME, BY COUNTRY GROUP

€ billion	Jun. 30, 2022	Dec. 31, 2021
Germany	34.6	37.8
Other industrialized countries	47.8	56.6
of which: France	10.1	12.6
of which: USA	6.4	7.5
of which: Netherlands	5.5	6.0
Advanced economies	1.0	1.3
Emerging markets	4.2	5.2
Supranational institutions	3.1	3.7
Total	**90.8**	**104.5**

Obligations in connection with the life insurance business require investments with longer maturities. This is also reflected in the breakdown of **residual maturities** shown in Fig. 31. As at June 30, 2022, 85 percent (December 31, 2021: 86 percent) of the total lending volume had a residual maturity of more than five years. By contrast, 2 percent of the total lending volume was due to mature within one year as at June 30, 2022 (December 31, 2021: 3 percent).

FIG. 31 – INSURANCE SECTOR: LENDING VOLUME, BY RESIDUAL MATURITY

€ billion	Jun. 30, 2022	Dec. 31, 2021
≤ 1 year	2.2	2.6
> 1 year to ≤ 5 years	11.3	12.3
> 5 years	77.3	89.5
Total	**90.8**	**104.5**

The **rating structure** of the lending volume in the Insurance sector is shown in Fig. 32. Of the total lending volume as at June 30, 2022, 76 percent was attributable to investment-grade borrowers (December 31, 2021: 79 percent). The lending volume that is not rated, which made up 22 percent of the total lending volume (December 31, 2021: 19 percent), essentially comprised consumer home finance for which external ratings were not available. The unrated lending volume is deemed to be low-risk because the lending is based on a selective approach and the mortgageable value of the assets is limited.

FIG 32 – INSURANCE SECTOR: LENDING VOLUME, BY RATING CLASS

€ billion		Jun. 30, 2022	Dec. 31, 2021
Investment grade	1A	23.0	27.0
	1B	9.5	11.7
	1C	-	-
	1D	11.7	12.6
	1E	-	-
	2A	8.2	11.1
	2B	5.0	6.2
	2C	6.0	7.3
	2D	2.8	3.2
	2E	-	-
	3A	2.8	3.5
Non-investment grade	3B	0.3	0.3
	3C	0.4	0.5
	3D	-	-
	3E	0.2	0.2
	4A	0.1	0.1
	4B	0.4	0.5
	4C	-	0.1
	4D	-	-
	4E	-	-
Default		-	-
Not rated		20.3	20.2
Total		**90.8**	**104.5**

To rate the creditworthiness of the lending volume, R+V uses external ratings that have received general approval. It also applies its own expert ratings in accordance with the provisions of Credit Rating Agency Regulation III to validate the external credit ratings. R+V has defined the external credit rating as the maximum, even in cases where its own rating is better. The ratings calculated in this way are matched to the DZ BANK credit rating master scale using the methodology shown in Fig. 20 of the 2021 risk report.

In the analysis of **individual concentrations**, the ten counterparties associated with the largest lending volumes accounted for 17 percent of R+V's total lending volume as at June 30, 2022 (December 31, 2021: 18 percent).

14.2 Credit portfolios particularly affected by acute global crises

The credit portfolio in the countries directly affected by the **war in Ukraine** is shown below. It consisted of a small volume of securities. Almost the entire securities portfolio was sold after the end of 2021. No significantly heightened risk was as yet evident in connection with the remaining portfolio as at the reporting date. It is described solely for reasons of transparency. The figures presented below are included in the disclosures for the lending volume as a whole (see section 14.1).

R+V's net lending volume in Russia, Ukraine, and Belarus totaled €2 million as at June 30, 2022 (December 31, 2021: €191 million). This equated to less than 1 percent of the Insurance sector's total lending exposure as at the reporting date, as was also the case at the end of 2021.
Fig. 33 shows the breakdown of the net lending volume by country affected.

FIG. 33 – INSURANCE SECTOR: NET LENDING VOLUME IN COUNTRIES AFFECTED DIRECTLY BY THE WAR IN UKRAINE

€ million	Jun. 30, 2022	Dec. 31, 2021
Russia	-	115
Belarus	1	7
Ukraine	1	70
Total	**2**	**191**

Over and above the countries involved in the war in Ukraine, the conflict has a negative impact globally on the credit ratings of securities issuers. This was also reflected in R+V's other securities exposures, which showed minor rating downgrades in the first half of the year.

Initial analysis of the impact of the threatened **Russian gas embargo** on market risk in the Insurance sector was carried out. Individual parts of the portfolio were identified as being affected. No material negative impact on market risk is currently evident.

14.3 Credit portfolios with increased risk content

R+V's exposure in credit portfolios with increased risk content is analyzed separately because of its significance for the risk position in the Insurance sector. This currently only affects the exposure in **eurozone periphery countries**. The figures presented here are included in the above analyses of the total lending volume (see section 14.1).

Investments in eurozone periphery countries totaled €4,882 million as at June 30, 2022 (December 31, 2021: €5,822 million). This constituted a reduction of 16 percent, which was attributable to a fall in fair values.

Fig. 34 shows the country breakdown of the exposure.

FIG. 34 – INSURANCE SECTOR: EXPOSURE IN EUROZONE PERIPHERY COUNTRIES

€ million	Jun. 30, 2022	Dec. 31, 2021
Portugal	**42**	**49**
of which: public sector	31	40
of which: non-public sector	10	9
of which: financial sector	3	4
Italy	**2,262**	**2,844**
of which: public sector	1,683	1,866
of which: non-public sector	580	978
of which: financial sector	455	838
Spain	**2,579**	**2,929**
of which: public sector	1,356	1,607
of which: non-public sector	1,222	1,322
of which: financial sector	991	1,080
Total	**4,882**	**5,822**
of which: public sector	3,070	3,513
of which: non-public sector	1,812	2,309
of which: financial sector	1,449	1,922

14.4 Risk position

As at June 30, 2022, the **overall solvency requirement** for market risk amounted to €3,073 million (December 31, 2021: €3,169 million) with a **limit** of €3,880 million (December 31, 2021: €4,400 million). The decrease in risk was due to the lower fair values of investments as a consequence of the rise in interest rates.

Fig. 35 shows the overall solvency requirement for the various types of market risk.

FIG. 35 – INSURANCE SECTOR: OVERALL SOLVENCY REQUIREMENT FOR MARKET RISK, BY RISK SUBTYPE

€ million	Jun. 30, 2022	Dec. 31, 2021
Interest-rate risk	1,400	1,250
Spread risk	923	1,305
Equity risk	1,523	1,332
Currency risk	308	319
Real-estate risk	428	441
Total (after diversification)	**3,073**	**3,169**

The overall solvency requirement for market risk includes a **decentralized capital buffer requirement**. This capital buffer requirement covers the spread and migration risk arising from sub-portfolios of Italian government bonds while also taking account of the increase in market risk that could arise from refinement of the method for measuring interest-rate risk.

As at June 30, 2022, the decentralized capital buffer requirement for market risk totaled €285 million (December 31, 2021: €204 million). This uplift resulted from the recognition of a new capital buffer requirement for interest-rate risk.

15 Counterparty default risk

Receivables arising from ceded reinsurance amounted to €194 million as at June 30, 2022 (December 31, 2021: €121 million), with entities with an external rating of A or better making up 99 percent of this amount (December 31, 2021: 100 percent). As at the prior-year reporting date, receivables from entities with an external rating of BBB or worse made up less than 1 percent of the total volume. The remaining receivables related to entities without a rating.

Overdue receivables from policyholders and insurance brokers more than 90 days past due as at the reporting date amounted to €219 million as at June 30, 2022 (December 31, 2021: €149 million).

As at June 30, 2022, the **overall solvency requirement** for counterparty default risk amounted to €265 million (December 31, 2021: €235 million) with a **limit** of €350 million that was unchanged compared with the end of 2021. This increase was attributable to larger derivatives exposures and higher amounts past due.

16 Operational risk

As at June 30, 2022, the **overall solvency requirement** for operational risk amounted to €683 million (December 31, 2021: €718 million). The decrease in risk was due to the decline in risk drivers in the form of insurance liabilities as a consequence of the rise in interest rates. At €1,000 million, the **limit** as at the reporting date was unchanged compared with the end of the previous year.

17 Risks from entities in other financial sectors

As at June 30, 2022, the **overall solvency requirement** for risks in connection with non-controlling interests in insurance companies and with entities in other financial sectors stood at €130 million (unchanged on the value as at December 31, 2021). At €180 million, the **limit** was likewise unchanged compared with the end of the previous year.